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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/526,360	12/30/2005	Bruno H. Walter	32361-265	8956
23971 7590 04/16/2007 BENNETT JONES C/O MS ROSEANN CALDWELL 4500 BANKERS HALL EAST 855 - 2ND STREET, SW CALGARY, AB T2P 4K7 CANADA			EXAMINER BOMAR, THOMAS S	
			ART UNIT	PAPER NUMBER
			3672	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		04/16/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/526,360	Applicant(s) WALTER ET AL.	
	Examiner Shane Bomar	Art Unit 3672	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 March 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 March 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>3/2/05, 3/30/06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to because the seals 32 and 33 have not been denoted with the proper cross-hatching, i.e., rubber or elastomer. As it currently stands, it appears that there are grooves for the seals but no seals. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities:
- a. In the Brief Description of Fig. 6B, the word --of-- should be added after “portion”.
 - b. On page 7, line 2, --, is-- should be added after “drill string” (i.e., “...drill string, is...”).
 - c. On page 7, lines 17-21, each recitation of “16” should be --16a-- since “16” is not in the figures.

Appropriate correction is required.

Claim Objections

3. Claims 26, 28, and 29 are objected to because of the following informalities:
- d. In claim 26, line 2, the recitation of “drive means to which the upper end is connectable is selected” should be rewritten as --drive means, to which the upper end is connectable, and is selected-- for clarity.
 - e. Claim 28 does not end with the required period.
 - f. In claim 29, line 2, the recitation of “a borehole” should be --the borehole--.

Appropriate correction is required.

4. Claim 27 is objected to under 37 CFR 1.75 as being a substantial duplicate of claim 22.

When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP

§ 706.03(k).

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-10, 14-18, and 20-33 are rejected under 35 U.S.C. 102(b) as being anticipated by US 2,287,714 to Walker.

Regarding claims 1, 6, 15, 18, 26, 30, and 31, Walker discloses a drill bit for forming a borehole through an earthen formation, the drill bit connected to string 1 comprising:

a housing 2 including an upper end, a lower end, an axis defined as extending through the upper end and the lower end and a bore extending parallel to the axis into the lower end;

a mandrel 3 slidably disposed in the bore, the mandrel having a lower end and an upper end;

a center cutter face 8 on the mandrel lower end;

two arms 5 each having a lower end and connected by a pivotal connection 7 to the housing adjacent the bore, the arms being radially moveable by rotation about the pivotal connection between a stored position (Fig. 5) and an expanded position(Figs. 1 and 6), the arms being drivable into the expanded position by the mandrel bearing there against to drive the arms out; and

wherein outer cutter faces 4 are on the arm lower ends so that outer cutter faces and the center cutter face are substantially continuous and co-planar (Figs. 1 and 3; page 2, col. 1, lines 20-65).

Regarding claims 2-5, 20, and 21, Figures 1, 5, and 6 show that the arms are pivotally connected in unnumbered slots in the housing 2, wherein the slots, in conjunction with the inner surface of the string 1, conform about the arm side and upper surfaces to support the arm and provide for transfer of stress into the housing.

Regarding claims 7-10, 22-25, and 27, Figure 3 shows that fluid will exit ports 16 and enter a channel between cutters 8 on the center face, whereby the fluid will then travel to channels between cutters 4 on the outer face and the center cutters 8 so that fluid is conveyed along the outer face.

Regarding claims 14 and 32, comparing Figure 5 to Figure 6 shows that the arms 5 are always supported by the mandrel, which also limits their outward movement.

Regarding claims 16 and 17, pins 11 releasably lock the mandrel 3 against sliding movement within the housing, while also allowing rotation of both the housing and the mandrel due to the interengagement (Figs. 1, 2, 5, and 6; page 2, col. 1, lines 56-65).

Regarding claims 28 and 29, the bit passes through the drift diameter of the string 1 when collapsed, while in the expanded position, the bit is selected to be capable of use to drill a bore hole of a gauge greater than the outer diameter of a tube string through which it has been tripped (Figs. 1 and 3-6).

Regarding claim 33, Figure 5 shows that the arms 5 extend into the bore of the housing 2 when the arms are collapsed.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 11-13 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walker in view of US 2003/0183424 to Tulloch.

Regarding claims 11, 12, and 19, Walker teaches the drill bit of claims 1 and 18 that includes a housing and a mandrel slidably disposed therein, wherein it appears that weight on the bit is what causes the mandrel to push the arms into their outward state. It is also taught that a chamber 21 is located between the housing and the mandrel, the chamber formed to accept hydraulic-fluid pressure from ports 10 that act as nozzles through the mandrel inner bore (Fig. 2). However, it is not explicitly taught that the chamber acts as a hydraulic drive to drive sliding movement of the mandrel along the bore of the housing.

Tulloch teaches an expandable bit similar to that of Walker, wherein mandrel 3A is slidably disposed in housing 2A so that downward movement of the mandrel extends the cutter carrying arms 6A and 7A (Figs. 9 and 10). It is further taught that while weight on the bit can cause the sliding movement and subsequent bit expansion, it is hydraulic chamber 17 that is supplied with fluid pressure through ports in the inner mandrel to drive the sliding movement of the mandrel (paragraphs 0061-0063). It would have been obvious to one of ordinary skill in the art, having the teachings of Walker and Tulloch before him at the time the invention was made, to modify the bit taught by Walker to include the hydraulic actuation of Tulloch. One would have been motivated to make such a combination because the references address the narrow problem of storing cutter arms in a retracted position and expanding them with a slideable mandrel downhole; therefore a person seeking to solve that exact problem would consult the references and apply their teachings together (Id. at 1277, 69 USPQ2d at 1691).

Regarding claim 13, Walker does not explicitly teach that cutters are on the side surface of the arms. Tulloch shows in Figures 1-4 that the cutter arms have cutters mounted on the side surfaces of the arms. It would have been obvious to one of ordinary skill in the art, having the teachings of Walker and Tulloch before him at the time the invention was made, to modify the arms taught by Walker to include the side cutters of Tulloch. One would have been motivated to make such a combination because the references address the narrow problem of storing cutter arms in a retracted position and expanding them with a slideable mandrel downhole; therefore a person seeking to solve that exact problem would consult the references and apply their teachings together (Id. at 1277, 69 USPQ2d at 1691). The side cutters would further allow the

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arms to be subject to less wear and possibly provide extra cutting capability where necessary (paragraph 0045 of Tulloch).


Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Eckel et al teach another expandable bit of particular interest (Figs. 2, 6, 7, and 9).

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shane Bomar whose telephone number is 571-272-7026. The examiner can normally be reached on Monday - Thursday from 6:00am to 2:30pm. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bagnell can be reached on 571-272-6999. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Shane Bomar
Patent Examiner
Art Unit 3672

April 2, 2007